TWO NEW SPECIES OF *MEGASELIA* (DIPTERA: PHORIDAE) FROM EUROPE

R. H. L. DISNEY

Field Studies Council Research Fellow, University Museum of Zoology, Downing Street, Cambridge CB2 3EJ.

The genus *Megaselia* Rondani is the largest in the family Phoridae, probably including more than half the species of the present-day phorid fauna. Not only the boundaries of the genus but also the recognition of the species is still far from satisfactory. The problems and the identification literature for the world are reviewed elsewhere (Disney, 1994). The present priority is to characterize clearly the males and to provide illustrations of the male hypopygia. The most recent treatment of European species is a key to the males of species recorded from the British Isles (Disney, 1989).

This paper describes two new species, which were collected in Germany and were sent to me by Dr Sabine Prescher and Dr Gisela Weber. In addition the male hypopygia of two poorly known species are illustrated.

The specimens have been mounted on slides in the standard manner recommended for male phorids (Disney, 1983, 1994). The type material has been deposited in the Cambridge University Zoology Museum.

DESCRIPTIONS OF SPECIES

Megaselia haraldlundi sp. nov.

Type locality, Germany, near Adenau.

Type material, holotype male, Germany, Eifel mountains, Nordrhein-Westfalen, near Adenau, 20.v.–3.vi.1990, in emergence trap in spruce forest. Leg. Mechthild Engel, deposited in Cambridge University Museum of Zoology; 1 male paratype with holotype.

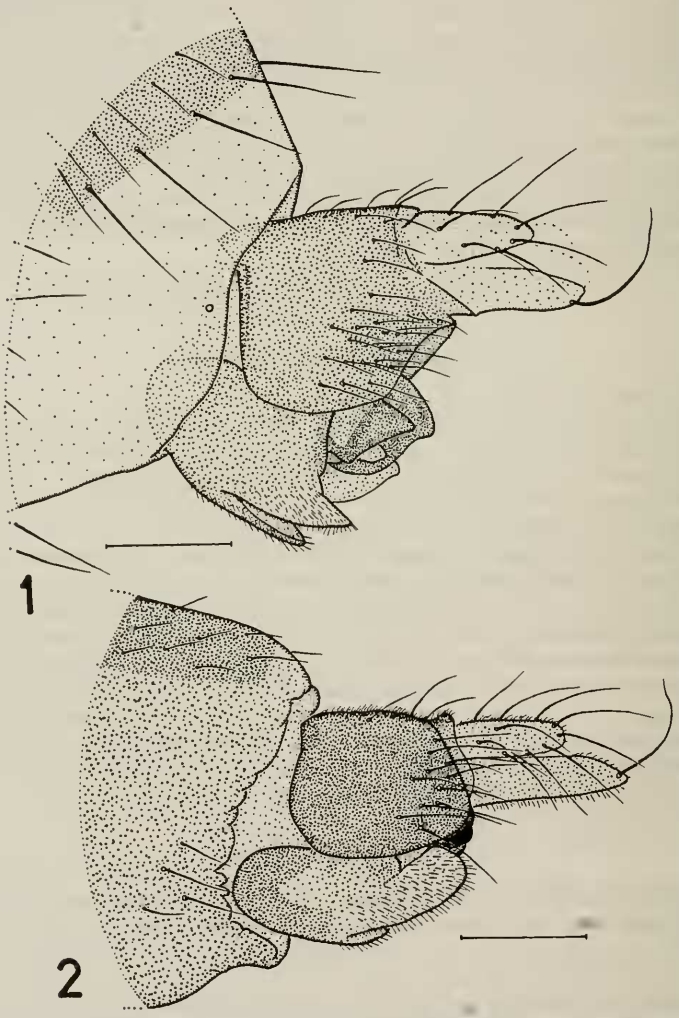
Etymology. The species is named after Harald Lund.

Diagnosis. Lower supra-antennal bristles strong, but a little shorter than upper pair, frons dull, labella with only sparse spines below, palps largely pale yellow, two notopleural bristles, scutellum with two hairs and two bristles, mesopleuron bare, epandrium with more than 20 hairs on left side, anal tube a little shorter than epandrium and brownish yellow, hairs of proctiger slightly more robust than those on cerci, hypandrial lobes with short hairs, legs mainly pale yellowish brown with darker apex to hind femur, hairs below basal half of latter longer than those of anteroventral row of outer half, hind tibia without differentiated anterodorsals, costal index about 0.47, costal section 1 longer than sections 2 + 3, costal cilia long, vein Sc free, haltere knob essentially yellow.

Description (male only)

Frons brown, with bristles positioned as Fig. 3. The lower supra-antennals are robust but a little shorter and more slender than the upper pair. Four bristles on cheek and four stronger ones on jowl. Frons with dense microtrichia (i.e. dull) and 50–60 hairs. Palps pale yellow very lightly tinged brown and with seven bristles, the longest being at most 0.09 mm long. The brown, subglobose, third antennal segment somewhat large (greatest diameter 0.16 mm). Arista brown, the basal segments about 2.5 × as long as broad, the first being fractionally longer, and swollen basal section of

third segment being just over 3 × as long as broad. Pubescence of third segment short. Proboscis pale dusky yellow, including labrum, whose greatest breadth is about 0.1 mm. Labella a little expanded, but with only a few scattered pale spines below apart from dense patch apicolaterally. Thorax brown, being darkest on top and more chestnut on sides. Each side of scutum with a humeral, two notopleurals, an intra-alar, a postalar and a prescutellar dorsocentral bristle. Scutellum with an anterior pair of hairs, at most as strong as those at rear of scutum, and a posterior pair of bristles. Mesopleuron bare. Abdomen with brown tergites with scattered short hairs, which are a little longer posterolaterally on 1–5, especially on 2. Posterior row of tergite 6 much stronger and longer (Fig. 1). Internally with four rectal papillae. Venter



Figs. 1–2. *Megaselia*, left faces of male hypopygia: (1) *M. haraldlundi*; (2) *M. intercostata*. Scale bars = 0.1 mm.

pale greyish yellow, but with darker transverse bands on flanks below sides of tergites. Ventrally with scattered hairs on segments 3–6, the longest being at rear of 6 in the middle. Hypopygium with brown epandrium, paler hypandrial lobes, a pale brownish yellow anal tube, and as Fig. 1.

Legs pale yellowish brown, with darker brown at apex of hind femur and along dorsal face of hind tibia. All five fore tarsal segments with a well-developed posterodorsal hair palisade. Front metatarsus more than 5 × as long as broad. Dorsal hair palisade of middle tibia extends three-quarters of its length. At least six of the hairs below basal two-thirds of hind femur are longer than those of anteroventral row in distal half. Hind tibia with about a dozen differentiated posterodorsal hairs, of which the seven lowest are more spine-like. The dorsal hair palisade is deflected onto anterior face just before last posterodorsal spine. Spines of apical comb of posterior face all simple. Wing 1.8–1.9 mm long. Costal index 0.47. Costal ratios 3.17–3.35 : 1.84–1.85 : 1. Costal cilia 0.13–0.14 mm long. Veins yellowish to brownish grey. Membrane lightly tinged brownish grey. Vein Sc clearly ending before reaching R_1. A small hair at base of vein 3. Axillary ridge with four bristles, the outermost being as long as costal cilia of section 3. Vein 4 originates just beyond fork of vein 3. Haltere with brown stem and pale yellow knob, which may be lightly tinged grey.

Similar species

In the keys to British *Megaselia* (Disney, 1989) this species readily runs to couplet 225 and then by a return loop to couplet 159 and to *M. septentrionalis* (Schmitz). This species and *M. haraldlundi* are evidently sibling species. The latter tends to be a little smaller and with much paler legs and palps. The size difference is best indicated by the length of the hind femur, which is less than 0.85 mm in *M. haraldlundi*, but more than this in *M. septentrionalis*. The hypopygia are similar (cf Fig. 1 with fig. 398 in Disney, 1989), but differ in small details. For example the hairs of the posterolateral extremity of the left side of the epandrium below the anal tube of *M. haraldlundi* are the shortest hairs, but in *M. septentrionalis* the hairs in this position are among the longer hairs on the side of the epandrium. The anterior scutellars are stronger in *M. septentrionalis*.

Megaselia septentrionalis was originally described from a single female (Schmitz, 1919). A male was included in the keys of Schmitz & Delage (1981), but the description is cut off in mid sentence, after the characterization of the antenna; this work having remained unfinished ever since. The inclusion in the key to British species, therefore, provides the best available published characterization of the male of this species.

Megaselia intercostata (Lundbeck, 1921)

Material examined, 1 male, Germany, Thüringen, Apfelstädter Ried nature reserve, 1–15.vi.1985. Leg. Jörg Weipert.

Lundbeck (1922) provides a description, with a figure of the wing, of this species. The male hypopygium is depicted in Fig. 2, a suitable specimen for illustration having not been available when writing the key to British *Megaselia* (Disney, 1989).

Megaselia jameslamonti sp. nov

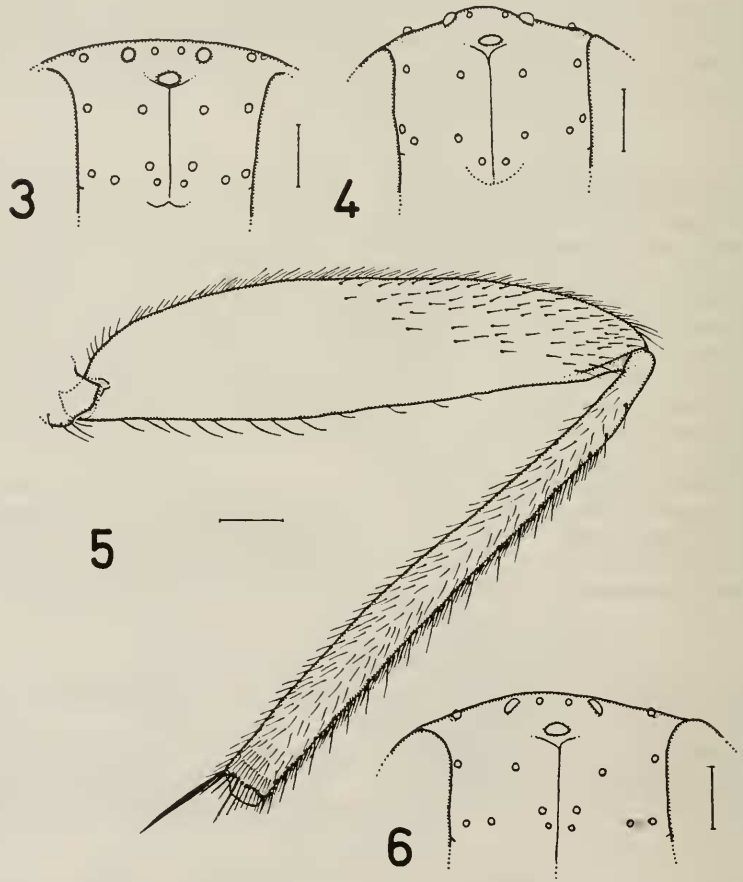
Type locality, Germany, Thüringen.

Type material, holotype male, Germany, Thüringen, Apfelstädter Ried nature reserve, 12–26.ix.1985, moist meadow with *Cirsium oleraceum* (L.) Scop., *Salix* and

Populus, in yellow bowl-trap. Leg. Jörg Weipert, in University Museum of Zoology, Cambridge, England.

Etymology. The species is named after James Lamont.

Diagnosis. Lower supra-antennal bristles subequal to upper pair, frons dull, palps brown, three notopleural bristles, scutellum with two hairs and two bristles, epandrium with less than a dozen hairs on left side plus one longer bristle-like hair, anal tube pale brown and clearly longer than epandrium, hairs of proctiger little if any stronger than hairs of cerci, left lobe of hypandrium very short, it and right lobe with short hairs, legs mainly brown, hairs below base of hind femur longer than those of anteroventral row in distal half, hind tibia without differentiated anterodorsal hairs, costal index 0.48–0.49, costal section 1 longer than sections 2+3, costal cilia short, vein Sc free, haltere knob brown.



Figs. 3–6. *Megaselia* males. (3) *M. haraldlundi* frons, with bristles represented by basal sockets only; (4) *M. jameslamonti* frons; (5) *M. teneripes*, posterior face of hind femur and tibia; (6) *M. teneripes* frons. Scale bars = 0.1 mm.

Description (male only)

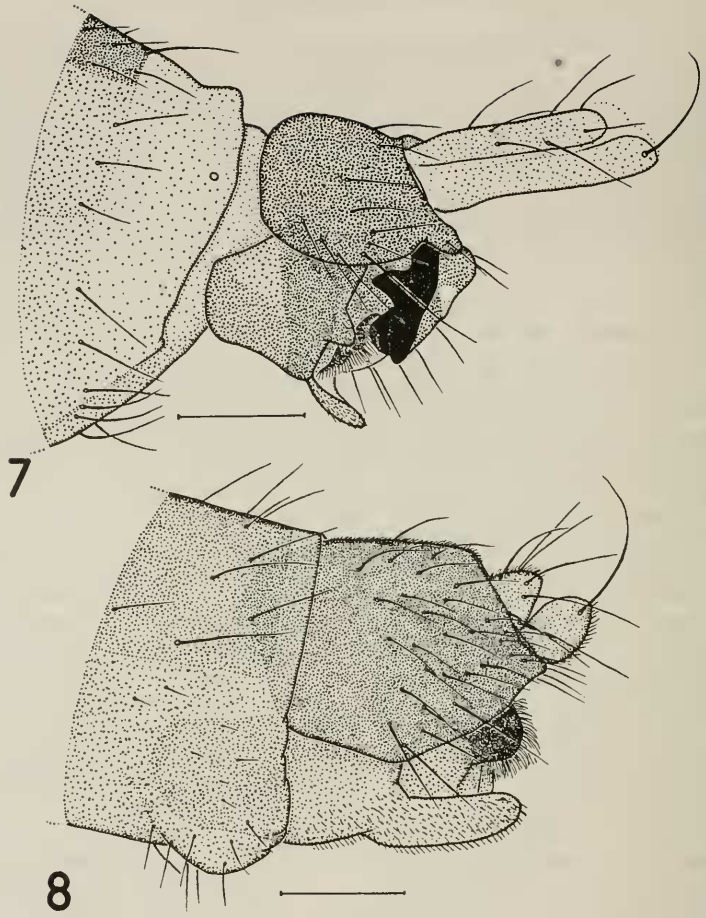
Frons brown, with bristles positioned as Fig. 4. The lower supra-antennal bristles subequal to upper pair. Three bristles on cheek and two stronger ones on jowl. Frons with dense microtrichia (i.e. dull) and 54–60 hairs. Palps brown, with a very short vestigial basal segment. Distal segment a little inflated in basal half and with 8–9 differentiated bristles, the longest being 0.11 mm in length. The brown, subglobose, third antennal segment large (greatest diameter 0.16 mm). Arista brown and short-haired. Labrum pale brown, its greatest breadth about half diameter of third antennal segment. Labella relatively narrow, pale whitish yellow but tinged pale brown above, with only a few scattered pale spines below.

Thorax brown to almost black on top. Each side of scutum with a humeral, three notopleurals, an intra-alar, a postalar and a prescutellar dorsocentral bristle. Scutellum with an anterior pair of fine hairs (shorter and finer than those at rear of scutum) and a posterior pair of bristles. Mesopleuron with 11–12 hairs and a bristle at hind margin that is longer than anterior notopleural bristle. Abdominal tergites brown with scattered short hairs, which are a little longer at hind margins. Venter brownish grey with scattered hairs below on segments 3–6. Hypopygium with brown epandrium and hypandrium apart from paler posterior lobe of right side, with a paler brown anal tube, and as Fig. 7.

Legs brown, but tarsi and front tibia paler, being pale yellow lightly tinged brown. All five fore-tarsal segments with a well developed postero-dorsal hair palisade. Front metatarsus a little thickened, being about 4.5 × as long as greatest breadth, and ventrally with a single longitudinal row of differentiated truncated hairs. Dorsal hair palisade of middle tibia extends only about 0.6 of its length. Five or six hairs below basal half of hind femur are longer than those of anteroventral row in distal half. Hind tibia with about 14 differentiated posterodorsal hairs, the six or seven in middle being the most robust. The dorsal hair palisade is deflected a little onto anterior face from position of penultimate posterodorsal hair. Spines of apical comb of posterior face all simple. Wing 1.59 mm long. Costal index 0.48–0.49. Costal ratios 4.10:2.05:1. Costal cilia 0.08–0.09 mm long. Veins grey to yellowish grey. Membrane only lightly tinged grey. Vein Sc fades away before reaching R_1. No hair at base of vein 3. Axillary ridge with two, well spaced, bristles, the outermost being longer than costal cilia of section 3. Vein 4 originates at or just beyond fork of vein 3, but its base is obscure. Both stem and knob of haltere brown.

Similar species

In the keys to British species (Disney, 1989) *M. jameslamonti* runs to couplet 48. Neither lead applies, although lead 2 is to be preferred. If one proceeds it runs to couplet 58 and then by a return loop to couplet 47; neither lead applies, because of the details of the hypopygium. A note at couplet 48 directs one to couplet 60, if neither lead of 48 applies. It will then run readily to couplet 126,but neither lead applies because of its long anal tube. In the keys of Schmitz (1957a) *M. jameslamonti* will run to couplets 19–22 on page 432. The species covered by these couplets are also included in my keys to British species except for *M. intonsa* Schmitz. The latter resembles *M. jameslamonti* but it has a shorter costal index, different costal ratios, longer costal cilia, and differences of detail in the hypopygium.



Figs. 7–8. *Megaselia*, left faces of male hypopygia. (7) *M. jameslamonti*; (8) *M. teneripes*. Scale bars = 0.1 mm.

Megaselia teneripes Schmitz, 1957b

Material examined, 1 male in Museum Koenig, Bonn, labelled "Dolomiten grasteilenpaß. S. Hang + 2540 m, 3/7/56 Klebelsberg" (or perhaps "Klobolsberg") "*Meg. teneripes*".

Schmitz (1957b) described a single female from the Spanish Sierra Nevada. The hitherto undescribed male has been remounted on a slide and is characterized below. The male closely resembles the female in its overall brown coloration and slender femora and tibiae (e.g. Fig. 5). The frontal bristles are disposed as in Fig. 6. The brown labrum much narrower than greatest diameter of third antennal segment (0.09 and 0.17 mm respectively). The brown labella relatively short and narrow, with only

a few pale spines below. The hypopygium as Fig. 8. As in the female, there are only two notopleural bristles. There is no notopleural cleft. Anterior scutellars reduced to small hairs, at most as long as hairs at rear of scutum. Apical comb on posterior face of hind tibia with all spines simple (Fig. 5). Wing similar to female (fig. 8 in Schmitz, 1957b), with strong vein Sc reaching and fusing with R_1. A minute hair at base of vein 3. Six well developed bristles on axillary ridge.

Similar species

In my keys (Disney, 1989) the male of *M. teneripes* runs to couplets 273 and 274. The details of the hypopygium and slender hind femora will readily distinguish it from the species of these couplets.

Acknowledgements

I am grateful to Dr H. Ulrich (Zoologisches Forschungsinstitut und Museum Koenig, Bonn) for the loan of the specimen in his care and for his hospitality during a visit to Bonn. My work on Phoridae is currently funded by a grant from the Leverhulme Trust (London), made to Dr W. A. Foster for a Research Associate, and a grant from the Isaac Newton Trust (Trinity College, Cambridge).

The new species are named after Harald Lund and James Lamont, who responded to an appeal for funds made by our local church

References

Disney, R. H. L. 1983. Scuttle flies Diptera Phoridae (except *Megaselia*). *Handbk Ident. Brit. Insects* **10(6)**: 1–81.

Disney, R. H. L. 1989. Scuttle flies Diptera Phoridae genus *Megaselia*. *Handbk Ident. Brit. Insects* **10(8)**: 1–155.

Disney, R. H. L. 1994. *Scuttle flies: The Phoridae*. Chapman & Hall, London. xii + 467 pp.

Lundbeck, W. 1921. New species of Phoridae from Denmark, together with remarks on *Aphiochaeta groenlandica* Lundb. *Vidensk. Meddr. Dansk. Naturh. Foren.* **72**: 129–143.

Lundbeck, W. 1922. Hypocera, Phoridae. *Diptera Danica* **6**: 69–455.

Schmitz, H. 1919. Über einige Phoriden der Oldenbergschen Sammlung. *Ent. Ber. Ned. Ent. Ver.* **5**: 185–196.

Schmitz, H. 1957a. Phoridae. In: Lindner, E. (Ed.). *Die Fliegen der palaearktischen Region* **4(33)** (Lieferung 196): 417–464.

Schmitz, H. 1957b. Zoologisch-systematische Ergebnisse der Studienreise von H. Janetschek und W. Steiner in die spanische Sierra Nevada 1954. IV. Phoridae (Diptera). *Sber. Öst. Akad. Wiss.* **166(5 + 6)**: 231–247.

Schmitz, H. & Delage, A. 1981. Phoridae. In: Lindner, E. (Ed.). *Die Fliegen der palaearktischen Region* **4(33)** (Lieferung 325): 665–712.

LETTER TO THE EDITOR

Capital letters for English names.—Both of us were wondering about the Journal's policy regarding the use of capital letters. We know that you are keen to avoid moving towards the German position, where every noun is capitalized, and we both heartily agree with this policy. Where we are unsure concerns the titles of articles which we are quoting. If an author used capitals in a paper or book title and we are quoting such a publication, we feel that we should use capitals exactly as he did. Similarly, in our paper (*Br. J. Ent. Nat. Hist.* **7**: 59–65), we quote Sladen who referred